

IV. THE RAINFALL RÉGIME OF THE SEVERAL STATES.

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[Dated: North Finchley, England, Feb. 24, 1915.]

In view of the fact that the agricultural statistics published in the Yearbook of the Department of Agriculture are grouped according to the areas included within the political boundaries of States, the author attempts to regroup the data from which the equipluves have been constructed (Parts I, II, and III) in order to determine the character of the rainfall régime of the separate States (fig. 43). It may be assumed that the values set out in the appended Table 1 are those which hold for an area which may be designated "the rainfall center of the State," and it must be noted that where two States differ in rainfall régime the boundary between the areas of divergent rainfall conditions does not coincide with the political boundary. Washington and Oregon, for example, have been subdivided and the Iowa division herein adopted includes the northern portion of Missouri.

The grouping of the States shown in figure 43 is not simple, as may be judged from the facts that there are two areas of indeterminate rainfall sections, *F* and *M*,

and a miscellaneous group, section *P*. The first basis of grouping was that of continuity; section *A* includes all the States whose intensity shows one summer maximum and one winter minimum, and section *C* those with precisely the reverse conditions. A general similarity to these two main regions gave rise to the sections *B* and *D*. Section *B* resembles section *A* with the addition of a secondary maximum in September, and section *D* has a secondary maximum in May imposed upon conditions resembling those of section *C*. Dryness in October provided a third criterion, and this feature is accompanied by a maximum that may come about March or about June. This furnishes the basis for the separation of sections *G* and *H* in accordance with the date of maximum rainfall intensity at one or other of these points. Section *K* has a minimum in November, and a maximum in July, and section *L* to the south has a minimum in November with an August maximum. Section *N* resembles sections *G* and *H* and includes the coast strip between Florida and Texas.

This classification reproduces, in the main, the more scientific divisions of the country previously determined, and the division lines on the accompanying map agree in tendency with those of the maps reproduced in

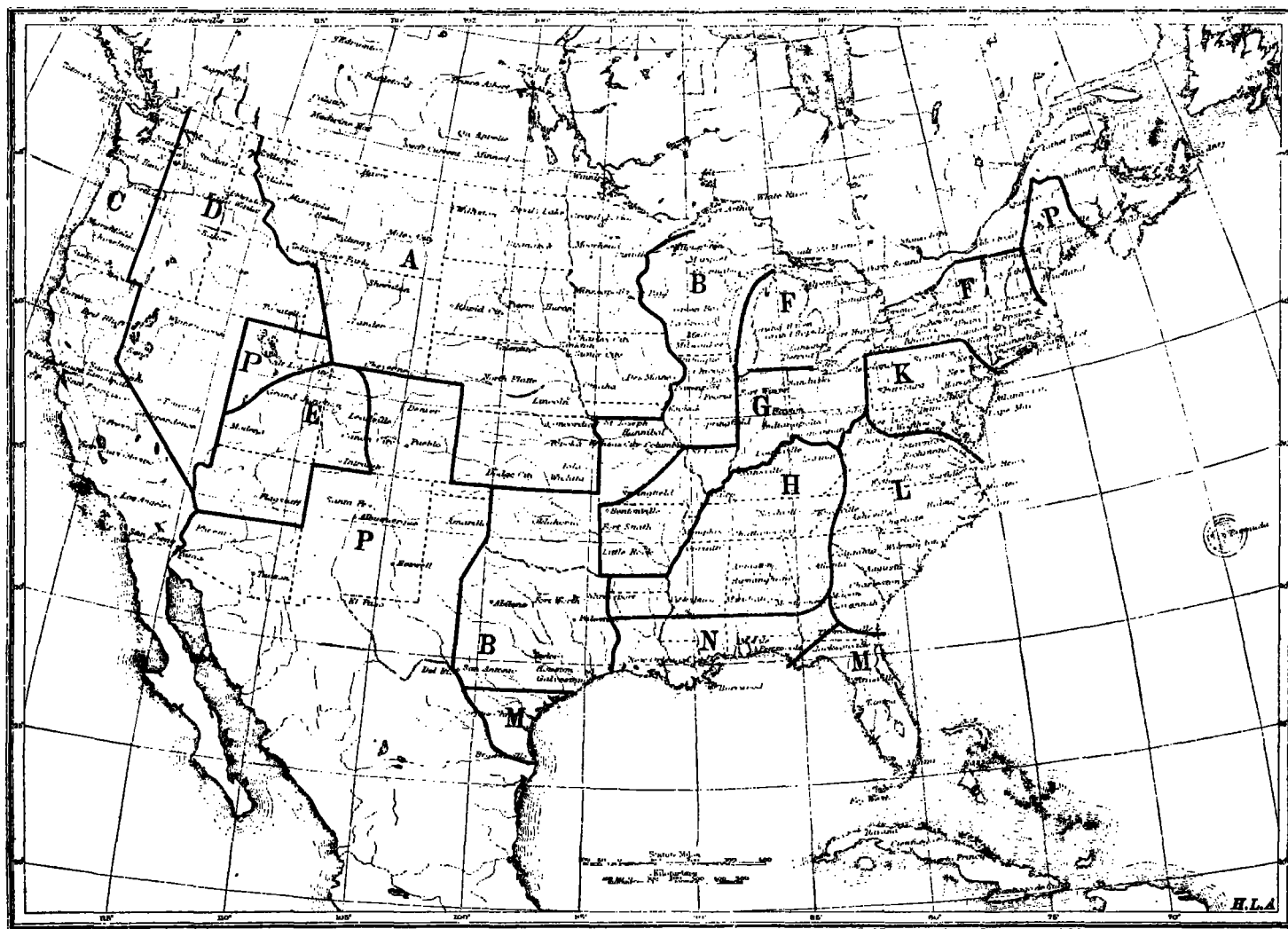


FIG. 43.—Approximate grouping of States as rainfall sections.

figures 8 (p. 16) and 26 (p. 171). The main features of each of the sections treated in detail in Table 2 are briefly summarized in Table 1 following.

The relationship between total annual precipitation and range of intensity is of interest. Down the middle of the country the rainfall increases with a decreasing range (sections *A* and *B*); in the far west, where Pacific influences govern the situation, on the coast rainfall decreases with an increasing range (section *C*), but inland both tend to decrease together (section *D*); and the conditions along the eastern coast (sections *K*, *L*, and Florida), as well as those along the next strip inland (sections *G*, *H*, and *N*), are quite different, since rainfall and range increase together. The diversity of the rainfall conditions of the United States could scarcely be better illustrated than by these facts.

TABLE 1.—Summary of the rainfall régimes of the several States.

Sections (fig. 43).	Months bringing—		Average precipitation.	Range of intensity.
	Principal maximum intensity.	Principal minimum intensity.		
<i>A</i>	June.....	January.....	<i>Inches.</i> 23	<i>Pl. coef.</i> 161
<i>B</i>	June.....	January.....	33	96
<i>C</i>	January.....	July.....	31	194
<i>D</i>	January.....	July.....	13	117
<i>E</i>	February.....	June.....	14	112
<i>F</i>	July.....	January.....	38	34
<i>G</i>	May.....	October.....	42	57
<i>H</i>	March.....	October.....	50	65
<i>K</i>	July.....	November.....	44	39
<i>L</i>	August.....	November.....	48	75
<i>M</i>	September.....	January.....	25	142
<i>N</i>	September.....	October.....	55	85

TABLE 2.—Pluviometric coefficients for the "rainfall centers" of the different States; and the sections shown in figure 43.

States.	Sep-tember.	Octo-ber.	Novem-ber.	Decem-ber.	Janu-ary.	Febru-ary.	March.	April.	May.	June.	July.	Aug-ust.	Total annual precipitation.	Range of intensity.
A. SINGLE SUMMER MAXIMUM.														
North Dakota.....	97	66	44	36	33	45	68	107	150	243	165	146	<i>Inches.</i> 18	<i>Pl. Coef.</i> 210
Minnesota.....	136	96	45	38	32	36	65	109	156	188	156	143	28	156
Montana.....	91	70	77	63	71	68	76	90	195	216	112	76	14	153
South Dakota.....	90	72	38	34	31	37	84	139	167	223	152	133	21	192
Iowa.....	129	87	54	47	40	47	71	113	159	168	152	133	32	128
Wyoming.....	82	78	48	40	43	51	100	150	225	160	121	93	13	182
Nebraska.....	105	81	33	30	27	40	57	129	173	206	175	142	26	179
Kansas.....	118	84	46	37	34	51	62	116	173	188	160	131	29	154
Section A.....	106	79	48	42	39	46	73	119	176	200	147	125	23	161
B. PRINCIPAL MAXIMUM, May or June; SECONDARY MAXIMUM, September.														
Wisconsin.....	133	98	67	54	49	51	74	104	144	156	148	122	31	107
Northern Illinois.....	119	73	81	67	60	71	97	104	139	136	128	110	36	72
Central Missouri.....	114	76	70	60	60	72	92	115	152	155	128	106	39	95
Oklahoma.....	119	94	71	52	43	50	77	117	213	141	125	98	32	170
Northern Texas.....	114	91	85	73	66	71	81	123	162	141	108	86	29	97
Central Texas.....	126	94	99	84	84	84	73	115	135	124	96	86	34	62
Section B.....	120	88	79	65	62	68	82	113	158	142	122	101	33	96
C. SINGLE WINTER MAXIMUM.														
Western Washington.....	70	91	193	188	148	139	109	87	71	56	33	25	47	170
Western Oregon.....	50	85	166	197	184	166	132	78	67	46	15	14	42	183
Northern California.....	22	66	130	198	231	204	183	88	55	18	2	2	36	229
Central California.....	22	62	115	189	247	202	215	88	51	8	1	1	18	246
Southern California.....	46	56	91	196	217	217	211	68	42	8	17	31	11	209
Section C.....	42	72	140	193	205	186	170	82	57	27	11	15	31	194
D. PRINCIPAL MAXIMUM WINTER; SECONDARY MAXIMUM, May.														
Eastern Washington.....	64	83	174	147	160	133	99	78	104	80	40	35	18	139
Eastern Oregon.....	72	83	131	129	142	141	136	91	121	86	35	38	15	109
Southern Idaho.....	56	90	107	120	136	144	151	100	126	89	38	42	13	115
Nevada.....	43	73	95	150	172	162	132	114	123	72	39	35	8	143
Section D.....	59	82	127	126	152	147	129	96	118	82	35	37	13	117
E. TWO MAXIMA.														
Southern Utah.....	100	78	88	106	114	144	134	100	107	27	89	113	12	117
Western Colorado.....	120	99	78	88	82	105	116	106	104	59	118	130	13	71
Western Arizona.....	71	63	95	136	124	170	120	63	44	17	123	164	17	147
Section E.....	97	80	85	110	110	140	123	90	85	34	110	136	14	112
F. INDETERMINATE REGION OF SMALL VARIATION.														
Michigan.....	112	98	94	84	82	83	84	92	125	118	123	105	32	43
New York.....	102	100	88	95	84	89	96	88	103	119	123	113	40	39
New England.....	95	96	108	89	96	107	103	83	98	96	116	113	42	33
Section F.....	103	98	97	89	87	93	94	88	109	111	121	110	38	34
G. MINIMUM IN October; MAXIMUM IN May-June.														
Indiana.....	92	71	106	89	78	98	112	101	124	129	104	96	40	58
Ohio.....	89	73	91	88	88	96	110	97	116	129	124	99	37	56
Southern Illinois.....	86	66	108	85	88	100	123	109	118	126	102	89	41	60
Southeast Missouri.....	94	70	95	81	82	95	121	111	130	126	106	80	45	60
Northern Arkansas.....	80	64	102	89	99	96	122	106	140	107	103	87	48	76
Section G.....	89	69	100	86	87	97	118	105	126	123	108	92	42	57

1 Relatively few observations.

2 Including a portion of northern Missouri.

3 Including northern Idaho.

4 New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

TABLE 2.—Pluviometric coefficients for the "rainfall centers" of the different States—Concluded.

States.	Sep-tem-ber.	Octo-ber.	Novem-ber.	Decem-ber.	Janu-ary.	Febru-ary.	March.	April.	May.	June.	July.	Aug-ust.	Total annual precipitation.	Range of intensity.
H. MINIMUM IN October; MAXIMUM IN February–March.														
Kentucky.....	75	69	103	95	102	114	128	101	104	114	112	93	Inches. 46	Pl. Coef. 89
Tennessee.....	76	67	94	102	113	122	135	113	91	106	101	90	50	78
Northern Georgia.....	78	62	70	102	104	149	132	92	74	100	116	121	52	87
Northern Alabama.....	65	66	74	104	115	142	140	105	89	100	112	99	51	87
Northern Mississippi.....	72	60	81	109	122	131	136	106	88	104	109	92	52	86
Southern Arkansas.....	80	68	104	95	116	106	129	116	118	105	97	68	46	61
Section H.....	74	58	88	101	112	127	133	106	94	105	108	94	50	65
K. MINIMUM IN November; MAXIMUM IN July–August.														
Pennsylvania.....	96	85	83	90	90	95	101	92	110	117	128	113	43	45
New Jersey.....	100	93	89	96	94	106	98	90	97	99	113	120	48	31
Maryland, Delaware, etc.....	97	86	77	93	86	105	100	93	104	120	122	117	41	36
Section K.....	98	88	83	93	90	102	100	92	104	112	122	116	44	39
L. MINIMUM IN November; MAXIMUM IN August.														
West Virginia ^a	80	72	75	86	102	99	111	106	109	135	123	103	43	63
Virginia.....	96	91	67	89	81	102	95	94	107	122	125	131	44	64
North Carolina.....	91	78	64	88	82	114	100	84	97	119	138	145	50	81
South Carolina (Inland).....	94	71	66	84	89	136	100	84	85	124	124	143	48	77
South Carolina (coast).....	116	79	63	69	77	95	46	68	88	132	153	175	50	112
Southern Georgia.....	95	71	61	81	82	140	108	77	73	121	140	151	52	90
Section L.....	97	77	68	83	85	114	100	86	91	126	134	141	48	75
M. INDETERMINATE SECTION WITH TROPICAL FEATURES.														
Eastern Florida.....	171	110	49	50	61	72	57	52	80	142	127	129	53	121
Western Florida.....	157	67	42	56	65	79	64	49	75	180	185	181	54	143
Southern Texas.....	201	101	82	65	59	72	68	77	132	124	91	128	25	142
N. MINIMUM IN October; GULF COAST SECTION.														
Southern Alabama.....	83	58	72	93	93	140	134	78	90	102	134	133	53	82
Southern Mississippi.....	93	55	63	91	100	131	122	97	75	108	131	129	57	76
Louisiana.....	112	63	72	89	80	110	79	92	76	135	161	131	56	98
P. MISCELLANEOUS AREAS.														
Northeastern Colorado ^a	84	81	37	35	28	47	88	176	209	138	158	119	16	181
Southeastern Colorado ^a	81	75	40	46	30	47	73	156	174	131	188	149	16	158
Northeastern New Mexico ¹	138	70	49	46	27	45	36	79	131	153	232	195	16	205
Arizona, etc. ¹	168	100	75	60	51	66	61	62	96	100	194	200	12	149
Northwestern Utah.....	78	90	94	119	128	131	135	118	148	62	40	57	13	108
Colorado area (west).....	97	76	93	136	121	133	100	40	20	20	152	192	13	172
Colorado area (east).....	128	70	66	79	79	108	77	32	22	37	236	266	6	244
Maine.....	99	98	105	100	105	121	116	81	93	91	99	87	42	34

¹ Relatively few observations.^a Similar in many respects to section G.^b Resembles section A, with special drop in June.**METEOROLOGICAL OBSERVATIONS NEAR SCHIEFFLIN, LIBERIA, 1913–1914.**

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[Dated: Weather Bureau, Washington, D. C., Apr. 27, 1915.]

The Christian Woman's Board of Missions, at Indianapolis, Ind., a few years ago established a branch mission at Schiefflin, Liberia, at which point a series of meteorological observations have been made for nearly two years past.

From May, 1913, to October, 1914, inclusive, the observations were made by Mr. Emory Ross, and since that time by Mr. Lewis A. Hurt, both associated with the mission work in that region.

Schiefflin, the point at which the observations are made, is located on the west coast of Africa, about 20 miles down the coast from Monrovia, the capital of the Republic of Liberia, and within a few hundred yards of the Atlantic Ocean, the exact location being in latitude 6° 11' north, and longitude 10° 33' west.

Instruments.—The instrumental outfit consists of a set of maximum and minimum thermometers and a rain gage. The thermometers are after the Weather Bureau pattern, made by the Taylor Instrument Co., of Rochester, N. Y., and compared with their standard. They are exposed

in a large perforated box, protected from the weather by a good roof, and are at an elevation of about 5 feet from the ground. The rain gage is of the Glaisher pattern, manufactured by Short and Mason of London, England, and consists of a container 8 inches in diameter with a funnel cover of the same dimensions furnished with a curved tube to prevent evaporation. The graduated measuring jar reads to hundredths of an inch and holds $\frac{1}{2}$ inch of rainfall. The gage is supported in a box fastened to a short post and the mouth of funnel is about 3 feet above the ground.

The instruments are located in a considerable cleared space about 25 feet above sea level, and opening toward the ocean. The adjacent country is both wooded and open.

The summary presented herewith embraces the principal numerical values of temperature, precipitation, and weather for each month, and should form a valuable basis for the study of the climate of that little known region.

Climate.—The following are a few of the more important features brought out by an inspection of the original records.

The climate of this place, only a few degrees from the Equator, is essentially equatorial, but doubtless greatly